



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,424	08/22/2001	Morihiko Hayashi	6640762113	4066
530 7590 07/23/2007 LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090			EXAMINER MEW, KEVIN D	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 07/23/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/762,424

Applicant(s)

HAYASHI, MORIHIKO

Examiner

Kevin Mew

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-31,33,35-53,55 and 57-95 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6,8-31,33,35-52,55 and 57-95 is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-5, 7, 53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Final Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 5/16/2007 have been considered. Claims 1-2, 4-31, 33, 35-53, 55, 57-95 are currently pending. Claims 3, 32, 34, 54, 56, 96-97 have been cancelled by applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-5, 7, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masui et al. (USP 6,393,013) in view of Kim (USP 6,172,971).

Regarding claim 1, Masui discloses a communication method for a plurality of communication terminals sharing a single channel to permit a communication channel to communicate at a predetermined communication cycle (a cycle of reservation, reply and traffic transmission, Fig. 2A) while avoiding a collision with an other communication terminal (each mobile terminal is assigned by a base station a time slot for transmission on a traffic channel, col. 2, lines 5-42), comprising:

a communication timing registering step for, upon start-up of communication, allocating communication timing of a communication terminal (base station receiving a reservation packet from a mobile terminal, col. 2, lines 5-42, Fig. 1) intending to start the communication within

said communication cycle , upon start-up of the communication (upon receiving a reservation packet, a time slot on traffic channel is assigned by the base station in accordance with a scheduled control, col. 2, lines 5-42); and

a notifying step for notifying other communication terminals sharing said channel of the allocated communication timing (notifying each mobile terminal of the assignment result through a reply packet, col. 2, lines 5-42);

whereby said notifying is performed for each iteration of said communication cycle (notification of the time slot assignment to each mobile terminal is performed through a reply packet during each communication cycle; note that a communication cycle is interpreted as request for traffic channel, reply time slot assignment through reply packet, and data transmission on time slot assigned);

wherein said communication terminal intending to start communication allocates its own communication timing by itself to execute said communication timing registering step and execute said notifying step (mobile terminal intending for data transmission transmits the reservation packet request on a reservation channel at arbitrary timing, col. 6, lines 42-46).

Masui may not explicitly show real-time data is communicated via said channel during a real-time region of said communication cycle and non-real-time data is communicated via said channel during a random access region of said communication cycle.

However, Kim discloses allocating time slots (real-time region) to real time traffic (real-time data, col. 3, lines 8-13) and the remaining idle time slots (random access region, col. 6, lines 23-33; note that non-real-time traffic contends for idle/unused time slots) to the non-real-time traffic (non-real-time data) in a time frame structure (communication cycle, col. 3, lines 8-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication method of Masui with the teaching of Kim in allocating time slots to real time traffic and the remaining idle time slots to the non-real-time traffic in a time frame structure such that the communication method of Masui will show real-time data is communicated via said channel during a real-time region of said communication cycle and non-real-time data is communicated via said channel during a random access region of said communication cycle.

The motivation to do so is to separate voice/data contention and to give priority to real-time traffic over non real-time traffic.

Regarding claim 2, Masui discloses the communication method according to claim 1, wherein

at least one communication control unit (base station) for controlling said communication cycle (base station is assigning a time slot for transmission on a traffic channel by a mobile terminal) is provided in a network comprised of the plurality of connected communication terminals sharing said channel (a plurality of mobile terminals for transmission on a traffic channel, col. 2, lines 5-42, Fig. 1),

said communication control unit (base station), when said communication terminal (mobile terminal) intending to start communication transmits an allocation request for said communication timing to said communication control unit (mobile terminal transmission reservation request packet to base station), executing said communication timing registering step (upon receiving a reservation request from a mobile terminal, base station assigns a time slot on

a traffic channel to the mobile terminal) and executing said notifying step (base station notifies each mobile terminal of the assignment result, col. 2, lines 5-42).

Regarding claim 4, the combined method of Masui and Kim discloses the communication method according to claim 1.

Masui may not explicitly show said real time region for communicating real time data based on the allocated communication timing and said random access region for communicating non-real-time data are provided by dividing said communication cycle into two sections.

However, Kim discloses allocating time slots (real-time region) to real time traffic (real-time data, col. 3, lines 8-13) and the remaining idle time slots (random access region, col. 6, lines 23-33; note that non-real-time traffic contends for idle/unused time slots) to the non-real-time traffic (non-real-time data) in a time frame structure (communication cycle, col. 3, lines 8-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication method of Masui with the teaching of Kim in allocating time slots to real time traffic and the remaining idle time slots to the non-real-time traffic in a time frame structure such that the communication method of Masui will show said real time region for communicating real time data based on the allocated communication timing and said random access region for communicating non-real-time data are provided by dividing said communication cycle into two sections.

The motivation to do so is to separate voice/data contention and to give priority to real-time traffic over non real-time traffic.

Regarding claim 5, Masui discloses the communication method according to claim 4, wherein said real time region is set up successively in said communication cycle corresponding to said communication timing allocated (traffic channel is set up successively according to the time slots assigned, col. 2, lines 52-60, Fig. 3) while a remaining region (reservation channel and reply channel, Fig. 2A) of said communication cycle is used as said random access region.

Regarding claim 7, Masui discloses a communication system to perform the communication method according to claim 1, wherein said channel uses a carrier (PN sequence) of a same predetermined frequency (data are transmitted at the same carrier frequency, col. 6, lines 16-27) and avoiding a collision (avoid collision) is carried out by detecting presence or absence of said carrier (each of transmitted data can be identified individually based on time deviation of one or more chips in transmission timing between respective symbols in data, col. 6, lines 16-41).

Regarding claim 53, Masui discloses a communication terminal (base station), wherein plural communication terminals share a single channel to communicate at a predetermined communication cycle (a cycle of reservation, reply and traffic transmission, Fig. 2A) while avoiding a collision with other communication terminals (each mobile terminal is assigned by a base station a time slot for transmission on a traffic channel, col. 2, lines 5-42), comprising:

communication timing allocation means (upward schedule control, element 93, Fig. 10) for prior to start-up of data communication, allocating communication timing to itself (upon receiving a reservation packet, a time slot on traffic channel is assigned by the base station in

accordance with a scheduled control, col. 2, lines 5-42) and notifying other communication terminals of this (notifying each mobile terminal of the assignment result through a reply packet, col. 2, lines 5-42); and

transmission control means (traffic packet construction means, element 98, Fig. 10) for transmitting data at said communication timing (transmitting data to each mobile terminal at the time slot specified by the base station, col. 2, lines 25-27) at every communication cycle (at every cycle of reservation, reply and traffic transmission, Fig. 2A).

Masui may not explicitly show real-time data is communicated via said channel during a real-time region of said communication cycle and non-real-time data is communicated via said channel during a random access region of said communication cycle.

However, Kim discloses allocating time slots (real-time region) to real time traffic (real-time data, col. 3, lines 8-13) and the remaining idle time slots (random access region, col. 6, lines 23-33; note that non-real-time traffic contends for idle/unused time slots) to the non-real-time traffic (non-real-time data) in a time frame structure (communication cycle, col. 3, lines 8-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication method of Masui with the teaching of Kim in allocating time slots to real time traffic and the remaining idle time slots to the non-real-time traffic in a time frame structure such that the communication method of Masui will show real-time data is communicated via said channel during a real-time region of said communication cycle and non-real-time data is communicated via said channel during a random access region of said communication cycle.

The motivation to do so is to separate voice/data contention and to give priority to real-time traffic over non real-time traffic.

Allowable Subject Matter

3. Claims 6, 8-14, 15-22, 23-31, 33, 35-40, 41-45, 46-52, 55, 57-95 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 6, wherein if the real time data transmitted through said real time region is not received properly, said real time data not received properly is re-transmitted through said random access region.

In claim 8, a communication timing allocation step for, if said response arises corresponding to said call, allocating communication timing for said call terminal and said mating terminal in said communication cycle.

In claims 15, 23, 41, 72, empty setting step for setting the length of empty time in said channel capable of starting transmission of data corresponding to the allocated communication order in said communication terminal to which said communication order is allocated.

a data transmitting step for transmitting data, when emptiness of the same length as said empty time set up in aid empty time setting step is detected on said channel in said communication terminal to which said communication order is allocated, transmitting data.

In claims 31, 52, a re-transmission control means for, if said real time real time data transmitted through said real time region by control of said transmission control means is not received properly, re-transmitting said real time data not transmitted properly through said random access region.

In claims 36, 62, 63, allocation request means for, if a response is returned from said mating terminal corresponding to said communication request formed by said communication request means, forming an allocation request of communication timing for itself which is a call terminal and said mating terminal and transmitting this to said communication control unit.

In claims 46, 84, 85, allocation request means for, if a response is returned from said mating terminal corresponding to said communication request formed by said communication request means, forming an allocation request of communication timing for itself which is a call terminal and said mating terminal and transmitting this to said communication control unit,

empty setting step for setting the length of empty time in said channel capable of starting transmission of data corresponding to the allocated communication order in said communication terminal to which said communication order is allocated.

a data transmitting step for transmitting data, when emptiness of the same length as said empty time set up in aid empty time setting step is detected on said channel in said communication terminal to which said communication order is allocated, transmitting data.

In claim 73, a communication order allocation means, prior to start-up of data communication, allocating timing to itself and notifying other communication terminals of this;

empty setting step for setting the length of empty time in said channel capable of starting transmission of data corresponding to the allocated communication order in said communication terminal to which said communication order is allocated.

a data transmitting step for transmitting data, when emptiness of the same length as said empty time set up in aid empty time setting step is detected on said channel in said communication terminal to which said communication order is allocated, transmitting data.

Response to Arguments

4. Applicant's Remarks/Arguments filed on 5/16/2007 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Mew *KM*
Work Group 2616


CHI PHAM
SUPERVISORY PATENT EXAMINER

7/20/07